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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,390	01/28/2004	Hiroshi Kusumoto	00862.023423	2532

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EXAMINER

UNDERWOOD, JARREAS C

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/765,390	KUSUMOTO, HIROSHI	
	Examiner	Art Unit	
	Jarreas C. Underwood	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-11 and 15 is/are rejected.
- 7) ☒ Claim(s) 5-7 and 12-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413). |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1-2, 8-9 are objected to because of the following informalities: The word "manage" is indeterminate. The phrase "evaluate and control" should be used instead. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "normally" in claim 1 and 8 is a relative term that renders the claim indefinite. The term "normally" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be possible to evaluate multiple quantities in the evaluation step, each of which could be considered non-linear. For purposes of examination the examiner defines "normally" as "correctly" referring to an ability to safely and securely hold the substrate.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (U.S. Patent Application Publication 2003/0020889) in view of MacPherson (U.S. Patent 5,783,754).

As to claim 1, Takahashi discloses a substrate alignment apparatus which aligns and fixes a substrate (Figure 1, element W) on a substrate stage (Figure 1, element WST), comprising:

a chucking pad (Figure 1, element 25) fixed on the substrate stage to chuck and fix a substrate;

a moving unit (Figure 1, element 24) which moves the substrate with respect to the substrate stage such that a mark on the substrate stage (Figure 6A, element FM2) and a mark on the substrate (Figure 6A, element N) coincide with each other; and

a determination unit (Figure 1, element 20) which manages a relative position between said chucking pad and the substrate after movement by said moving unit.

However Takahashi does not teach that the determination unit is capable of determining whether said chucking pad can normally chuck the substrate.

MacPherson discloses an apparatus for measuring the gripping strength of a wafer holder (column 1, lines 44-45).

It would have been obvious to one having ordinary skill in the art at the time of invention to include an apparatus for measuring the gripping strength of the vacuum chuck in order to detect worn systems, thus preventing wafer scratching or fracturing and the formation of silicon dust that can further contaminate the wafer.

4. As to claim 8, the method would flow from the apparatus as set forth above.

5. Claims 2-4, 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of MacPherson in further view of Kosugi (U.S. Patent 4,648,7083).

As to claim 2, Takahashi in view of MacPherson discloses everything claimed, as applied above, with the exception of a moving unit including;

a first unit which aligns the substrate with reference to an outer shape of the substrate;

Kosugi teaches a moving unit made of:

a first unit (Figure 3, element 20) which aligns the substrate with reference to an outer shape of the substrate; and

a second unit which detects the mark drawn on the substrate (Figure 3, element 10) and moves the substrate by a shift from the mark on the substrate stage (Figure 3, elements 7-8).

It would have been obvious to one having ordinary skill in the art at the time of invention to include a prealignment station using the peripheral shape of the wafer in order to significantly shorten the time required for exact positioning of the wafer.

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6. As to claim 3, Takahashi in view of MacPherson discloses everything claimed, as applied above, with the exception of the moving unit, where the first unit is arranged on a stage separate from the substrate stage, and the second unit is arranged on the substrate stage.

Kosugi teaches a moving unit, wherein the first unit (Figure 3, element 20) is arranged on a stage (Figure 3, element 23) separate from the substrate stage (Figure 3, element 7), and the second unit (Figure 3, element 5) is arranged on the substrate stage.

It would have been obvious to one having ordinary skill in the art at the time of invention to include a prealignment station using the peripheral shape of the wafer in order to significantly shorten the time required for exact positioning of the wafer.

7. As to claim 4, Takahashi in view of MacPherson discloses everything claimed, as applied above, with the exception of the moving unit, where the first unit and second units are arranged on a stage separate from the substrate stage.

Kosugi teaches a moving unit, wherein the first unit (Figure 3, element 20) is arranged on a stage (Figure 3, element 23) separate from the substrate stage (Figure 3, element 7), and the second unit (Figure 3, element 5) is separate on the substrate stage.

It would have been obvious to one having ordinary skill in the art at the time of invention to include a prealignment station using the peripheral shape of the wafer in order to significantly shorten the time required for exact positioning of the wafer.

8. As to claims 9-11, the method would flow from the apparatus as set forth above.

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9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of MacPherson.

Takahashi in view of MacPherson discloses everything claimed, as applied above, including an exposure apparatus (Takahashi, Figure 1, element PL) wherein a reticle (Takahashi, Figure 1, element R) is aligned by a substrate alignment apparatus (Takahashi, Figure 1, elements 20, 24, 25).

Allowable Subject Matter

10. Claims 5-7, 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is an examiner's statement of reasons for allowance:

12. As to claims 5 and 12, the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus and method wherein if said determination unit determines that said chucking pad cannot normally chuck the substrate, the amount by which the second unit moves the substrate is limited to a value within a range which enables said chucking pad to normally chuck the substrate, in combination with the rest of the limitations of claims 2 and 9, respectively.

13. As to claim 6 and 13, the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus unit and method wherein if said determination unit determines that said chucking pad cannot normally chuck the substrate, alignment of the substrate is stopped, in combination with the rest of the limitations of claims 3 and 10, respectively.

14. As to claim 7 and 14, the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus or method wherein, if said determination unit determines that said chucking pad cannot normally chuck the substrate, transportation of the substrate to the substrate stage is stopped, in combination with the rest of the limitations of claims 4 and 11, respectively.

15. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bacchi et al (U.S. Patent 6,366,830); Hofmeister (U.S. Patent 6,002,840); Inoue (U.S. Patent Application Publication 2002/0063856); Miyazaki et al (U.S. Patent 4,635,373)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jarreas C. Underwood whose telephone number is (575) 272-1536. The examiner can normally be reached on Monday-Friday 0800-1630.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on (571) 272-2059. The fax phone

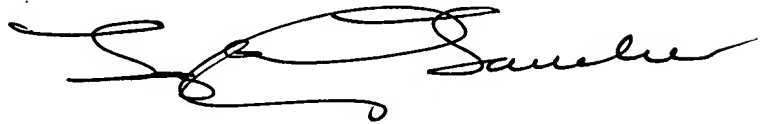
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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jarreas Underwood
Patent Examiner
Art Unit 2877
30 March 2006


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LAYLA G. LAUCHMAN
PRIMARY EXAMINER